

Metro Phoenix

SF End Use Study

Proposed Study of Single Family Home Water Use

City of Chandler, Town of Gilbert, City of Glendale, City of Phoenix

Phoenix Groundwater Users Advisory Council Meeting, 2-10-2016

- Municipal water use has declined in past years
 - Changing fixture and appliance standards
 - Drive to reduce energy & water use in residential and commercial sectors
 - Shift to water-efficient landscapes
- Understanding complexities – challenging but worthwhile

GPCD Declining

- National studies have provided limited info for Phoenix Metro Area
 - More detailed information needed on fixtures and appliances in different types & ages of homes
 - Phoenix Metro Area presents unique challenges for interpreting outdoor water use
- Past studies show SF indoor and outdoor use is falling
- More in-depth primary water use and device/landscape inventory research is sought

Past Studies

- Gradual transition to more efficient fixtures in existing structures built between 1900 and 1995 **will** continue
- Significant savings from residential washing machines **will** be seen over next 20 years
- Significant savings from ICI sector devices and practices **will** be seen over next 20 years
- Transition to more efficient landscapes **probably** will continue
- Question isn't if demand will fall; question is **how much**

Demand Will Continue to Fall On a Per Capita Basis

- How efficient are devices and practices in different ages and types of homes and businesses?
- How quickly are older devices and practices being replaced by more efficient ones?
- Does water use for the same types of homes and businesses vary significantly according to location?
- How quickly are homes and businesses switching to more efficient landscapes?
- Why is use often different with similar landscapes (over-watering; deficit irrigation; better irrigation systems; etc.)?

Types of Questions

- Two Study Phases
 - Single Family Residential Study
 - Commercial, Industrial, Institutional (CII)
- Partners:
 - City of Phoenix
 - City of Chandler
 - Town of Gilbert
 - City of Glendale

Proposed Studies

- **City of Phoenix** – wide range of homes & ICI built 1940s to present
- **City of Chandler** – range of homes built 1970 on with high-tech concentration in ICI
- **Town of Gilbert** – largely constructed since 1990 with new homes & ICI
- **City of Glendale** – range of homes and ICI with many homes built 1960-1980
- Combined population over 2,000,000 (over 50% of Phoenix AMA)


Diverse Study Area Characteristics

- Bridge information gaps through primary data collection/analysis by consultant
- Components include aerial imagery analysis, data-logging, billing data analysis, potential site audit & smart meter studies
- Municipal partners provide in-kind services including installation of data-loggers, aerial analysis, data analysis and site audits

Methodology

- Request from Water Management Assistance Program (WMAP) for SF study ~\$242,000
 - Municipal utility in-kind costs comparable
 - SF study duration approximately 1 year
 - City of Phoenix would be lead party
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- Phase 2 Commercial/Industrial/Institutional study scope being developed
 - City of Chandler would be lead party

Costs / Study Duration

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- Improve Baseline Data on Current Use
 - Estimate Rates of Transition (Devices/Landscapes/Etc.)
 - Determine Why Variance in Landscape Use is So Great
 - Estimate Future Efficiency Gains
 - Develop Better Projections

What We Need To Know About Present & Future Use



Questions?
